

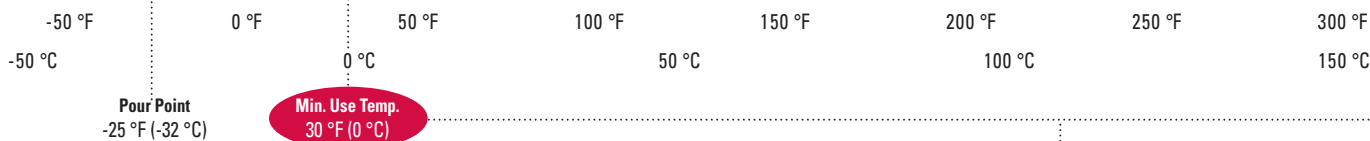
# THERMINOL® 66

Heat Transfer Fluid by **Solutia**

Unique  
High-temperature,  
Low-pressure  
Heat Transfer Fluid

30 °F to  
650 °F





## OPTIMUM USE RANGE\*

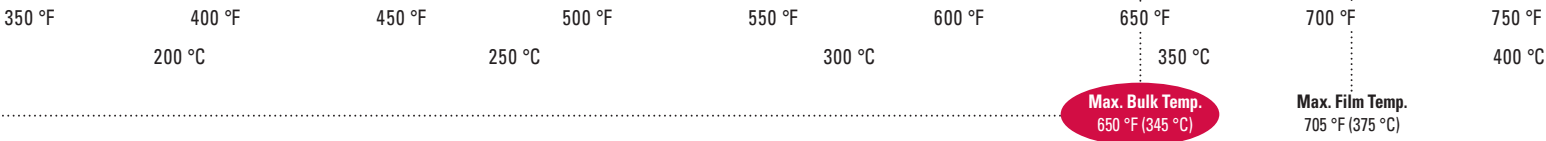
30 °F TO 650 °F (0 °C TO 345 °C)

Therminol® 66 synthetic heat transfer fluid offers outstanding high-temperature performance to 650 °F (345 °C), including excellent thermal stability and low vapor pressure. These properties result in reliable, consistent performance of heat transfer systems over long periods of time. Therminol 66 performance is proven through many years of industrial experience under a wide range of operating conditions. No heat transfer fluid material in the world has a higher degree of customer satisfaction than Therminol 66.

# THERMINOL® 66

Heat Transfer Fluid by **Solutia**

# 66



TYPICAL  
PROPERTIES\*†

Appearance	Clear, pale yellow liquid
Composition	Modified terphenyl
Moisture Content, Maximum	150 ppm
Flash Point (ASTM D-92)	184 °C (363 °F)
Fire Point (ASTM D-92)	212 °C (414 °F)
Autoignition Temperature (ASTM E-659)	374 °C (705 °F)
Kinematic Viscosity, at 40 °C	29.6 mm²/s (cSt)
Kinematic Viscosity, at 100 °C	3.8 mm²/s (cSt)
Density at 25 °C	1005 kg/m³ (8.39 lb/gal)
Specific Gravity (60 °F/60 °F)	1.012
Coefficient of Thermal Expansion at 200 °C	0.000819/°C (0.000455/°F)
Average Molecular Weight	252
Pour Point	-32 °C (-25 °F)
Pumpability, at 2000 mm²/s (cSt)	-3 °C (27 °F)
Pumpability, at 300 mm²/s (cSt)	11 °C (52 °F)
Minimum Temperatures for Fully Developed Turbulent Flow (Re = 10000)	
10 ft/sec, 1-in tube	72 °C (162 °F)
20 ft/sec, 1-in tube	53 °C (128 °F)
Transition Region Flow (Re = 2000)	
10 ft/sec, 1-in tube	35 °C (96 °F)
20 ft/sec, 1-in tube	26 °C (78 °F)
Boiling Range, 10%	348 °C (658 °F)
Boiling Range, 90%	392 °C (738 °F)
Normal Boiling Point	359 °C (678 °F)
Heat of Vaporization at Maximum Use Temperature 345 °C	272 kJ/kg (117 Btu/lb)
Optimum Use Range	0-345 °C (30-650 °F)
Maximum Film Temperature	375 °C (705 °F)
Pseudocritical Temperature	569 °C (1056 °F)
Pseudocritical Pressure	24.3 bar (353 psia)
Pseudocritical Density	317 kg/m³ (19.8 lb/ft³)

\* These data are based upon samples tested in the laboratory and are not guaranteed for all samples.  
Write us for complete sales specifications for Therminol 66 fluid.  
† Does not constitute an express warranty. See NOTICE on the back page of this bulletin.

# PROPERTIES OF THERMINOL® 66

Temperature		Liquid Density			Liquid Heat Capacity		Liquid Enthalpy**		Heat of Vaporization	
°F	°C	lb/gal	lb/ft³	kg/m³	Btu/lb-°F [cal/g-°C]	kJ/kg·K	Btu/lb	kJ/kg	Btu/lb	kJ/kg
20	-7	8.56	64.0	1026	0.352	1.47	7.0	16.2	179.6	417.5
30	-1	8.53	63.8	1022	0.356	1.49	10.5	24.4	178.5	414.8
40	4	8.50	63.6	1019	0.361	1.51	14.1	32.7	177.3	412.2
60	16	8.44	63.1	1011	0.370	1.55	21.4	49.7	175.1	407.1
80	27	8.38	62.7	1003	0.379	1.58	28.9	67.1	173.0	402.0
100	38	8.32	62.2	997	0.388	1.62	36.5	84.9	170.8	397.1
120	49	8.26	61.8	989	0.397	1.66	44.4	103.2	168.7	392.2
140	60	8.19	61.3	982	0.406	1.70	52.4	121.8	166.7	387.5
160	71	8.13	60.8	974	0.415	1.74	60.6	140.9	164.7	382.8
180	82	8.07	60.4	967	0.424	1.78	69.0	160.5	162.7	378.3
200	93	8.01	59.9	960	0.434	1.81	77.6	180.4	160.8	373.8
220	104	7.94	59.4	952	0.443	1.85	86.4	200.8	158.9	369.3
240	116	7.88	59.0	944	0.452	1.89	95.3	221.6	157.0	365.0
260	127	7.82	58.5	937	0.462	1.93	104.5	242.8	155.2	360.6
280	138	7.75	58.0	929	0.471	1.97	113.8	264.5	153.3	356.4
300	149	7.69	57.5	921	0.480	2.01	123.3	286.6	151.5	352.1
320	160	7.62	57.0	914	0.490	2.05	133.0	309.2	149.7	347.9
340	171	7.56	56.5	906	0.500	2.09	142.9	332.2	147.9	343.8
360	182	7.49	56.1	898	0.509	2.13	153.0	355.6	146.1	339.6
380	193	7.43	55.6	890	0.519	2.17	163.3	379.5	144.3	335.4
400	204	7.36	55.1	882	0.528	2.21	173.7	403.8	142.5	331.2
420	216	7.29	54.5	874	0.538	2.25	184.4	428.6	140.7	327.0
440	227	7.22	54.0	866	0.548	2.29	195.2	453.8	138.9	322.8
460	238	7.15	53.5	857	0.558	2.33	206.3	479.6	137.0	318.5
480	249	7.08	53.0	849	0.568	2.38	217.6	505.7	135.2	314.2
500	260	7.01	52.5	840	0.578	2.42	229.0	532.3	133.3	309.8
520	271	6.94	51.9	832	0.588	2.46	240.7	559.4	131.3	305.3
540	282	6.87	51.4	823	0.598	2.50	252.5	587.0	129.4	300.7
560	293	6.79	50.8	814	0.608	2.54	264.6	615.0	127.4	296.0
580	304	6.72	50.2	805	0.618	2.59	276.8	643.5	125.3	291.2
600	316	6.64	49.7	796	0.628	2.63	289.3	672.5	123.2	286.3
620	327	6.56	49.1	786	0.639	2.67	302.0	701.9	121.0	281.2
640	338	6.48	48.5	777	0.649	2.72	314.9	731.9	118.7	276.0
650	345	6.44	48.2	772	0.655	2.74	321.4	747.0	117.6	273.3
660	349	6.40	47.9	767	0.660	2.76	328.0	762.3	116.4	270.5
680	360	6.32	47.3	757	0.671	2.81	341.3	793.2	113.9	264.9
700	371	6.23	46.6	747	0.682	2.85	354.8	824.7	111.4	259.0

\* Maximum recommended bulk temperature 650 °F (345 °C).

† These data are based upon samples tested in the laboratory and are not guaranteed for all samples. Write us for complete sales specifications for Therminol 66 fluid.

\*\* The liquid enthalpy basis is zero at 0 °F.

# HEAT TRANSFER FLUID<sup>\*†</sup>

Liquid Thermal Conductivity			Liquid Viscosity			Vapor Pressure				Temperature	
Btu/ ft-hr-°F	kcal/ m-hr-°C	W/m•K	lb/ft-hr	cSt [mm²/s]	cP [mPa•s]	psia	mm Hg	kgf/cm²	kPa	°F	°C
0.0685	0.1020	0.1185	10070	4060	4160					20	-7
0.0684	0.1018	0.1183	3820	1544	1579					30	-1
0.0683	0.1016	0.1181	1679	681	694					40	4
0.0681	0.1013	0.1177	456	186.3	188.4					60	16
0.0678	0.1009	0.1173	171.9	70.8	71.0					80	27
0.0675	0.1005	0.1168	81.2	33.7	33.6					100	38
0.0672	0.1001	0.1163	45.0	18.78	18.58					120	49
0.0669	0.0996	0.1158	27.9	11.74	11.53					140	60
0.0666	0.0991	0.1152	18.79	7.97	7.77	0.0016	0.085	0.00012	0.011	160	71
0.0662	0.0986	0.1145	13.48	5.76	5.57	0.0029	0.15	0.00021	0.020	180	82
0.0658	0.0980	0.1139	10.14	4.37	4.19	0.0051	0.26	0.00036	0.035	200	93
0.0654	0.0974	0.1132	7.91	3.44	3.27	0.0086	0.45	0.00061	0.060	220	104
0.0650	0.0967	0.1124	6.36	2.78	2.63	0.014	0.74	0.0010	0.098	240	116
0.0646	0.0961	0.1117	5.23	2.31	2.16	0.023	1.2	0.0016	0.16	260	127
0.0641	0.0954	0.1108	4.39	1.951	1.813	0.036	1.9	0.0025	0.25	280	138
0.0636	0.0946	0.1100	3.74	1.677	1.545	0.056	2.9	0.0039	0.38	300	149
0.0631	0.0939	0.1091	3.23	1.461	1.335	0.084	4.3	0.0059	0.58	320	160
0.0625	0.0931	0.1082	2.82	1.289	1.167	0.125	6.4	0.0088	0.86	340	171
0.0620	0.0922	0.1072	2.49	1.148	1.031	0.182	9.4	0.0128	1.26	360	182
0.0614	0.0914	0.1062	2.22	1.032	0.918	0.262	13.5	0.0184	1.80	380	193
0.0608	0.0905	0.1051	1.995	0.935	0.825	0.370	19.1	0.0260	2.55	400	204
0.0602	0.0895	0.1040	1.805	0.854	0.746	0.517	26.7	0.0363	3.56	420	216
0.0595	0.0886	0.1029	1.643	0.785	0.679	0.712	36.8	0.0501	4.91	440	227
0.0588	0.0876	0.1018	1.504	0.725	0.622	0.969	50.1	0.0681	6.68	460	238
0.0581	0.0865	0.1006	1.384	0.674	0.572	1.30	67.4	0.0916	8.98	480	249
0.0574	0.0855	0.0993	1.280	0.629	0.529	1.73	89.6	0.122	12.0	500	260
0.0567	0.0843	0.0980	1.188	0.591	0.491	2.28	118	0.160	15.7	520	271
0.0559	0.0832	0.0967	1.108	0.557	0.458	2.97	154	0.209	20.5	540	282
0.0552	0.0821	0.0954	1.037	0.527	0.429	3.84	199	0.270	26.5	560	293
0.0543	0.0809	0.0940	0.974	0.500	0.403	4.91	254	0.346	33.9	580	304
0.0535	0.0796	0.0926	0.918	0.477	0.379	6.24	323	0.439	43.0	600	316
0.0527	0.0784	0.0911	0.868	0.456	0.359	7.85	406	0.552	54.2	620	327
0.0518	0.0771	0.0896	0.822	0.438	0.340	9.81	508	0.690	67.7	640	338
0.0514	0.0764	0.0888	0.801	0.429	0.331	10.9	566	0.769	75.4	650	345
0.0509	0.0757	0.0880	0.781	0.421	0.323	12.2	630	0.856	83.9	660	349
0.0500	0.0744	0.0865	0.744	0.407	0.308	15.0	776	1.05	103	680	360
0.0491	0.0730	0.0848	0.711	0.393	0.294	18.4	949	1.29	127	700	371

TECHNICAL SERVICE HOTLINE (800) 433-6997



# PHYSICAL AND CHEMICAL CHARACTERISTICS

**Therminol 66 fluid is designed for use in non-pressurized/low-pressure, indirect heating systems.** It delivers efficient, dependable, uniform process heat with no need for high pressures. The high boiling point of Therminol 66 helps reduce the volatility and fluid leakage problems associated with other fluids.

While Therminol 66 has a relatively high flash point, it is not classified as a fire-resistant heat transfer fluid. Consequently, the use of protective devices may be required to minimize fire risk. The insurer of your property should be consulted relative to this matter.

The recommended maximum bulk (650 °F/345 °C) and film (705 °F/375 °C) temperatures are based on detailed thermal studies. Operation at or below these temperature maximums provides long service life under most operating conditions.

## THERMINOL® 66

### Heat Transfer Fluid by Solutia

Solutia recommends that systems utilizing Therminol 66 fluid should be blanketed with an inert atmosphere. Inert gas blanketing minimizes fluid oxidation and helps maximize fluid life. A system pressure relief device also should be provided.

Therminol 66 is non-corrosive to metals commonly used in the design of heat transfer systems.

Actual fluid life is quite dependent on system design and operation. As fluid ages, the formation of volatile (low-boiling) products and high-boiling compounds may result. Volatile products should be vented from the system to a non-hazardous area away from personnel and sources of ignition. The high-boiling compounds are generally soluble in the fluid. Significant overheating or fluid contamination will accelerate this decomposition and may result in separation of the high-boiling compounds as solids (tar, coke, etc.). These solids could be detrimental to the operation of the system and, when detected, should be removed.

## **SAFETY AND HANDLING**

Material Safety Data Sheets may be obtained through [www.therminol.com](http://www.therminol.com) or from Environmental Operations, Solutia Inc. Heat transfer fluids are intended only for indirect heating purposes. Under no circumstances should this product contact or in any way contaminate food, animal feed, food products, food packaging materials, food chemicals, pharmaceuticals or any items which may directly or indirectly be ultimately ingested by humans. Any contact may contaminate these items to the extent that their destruction may be required. Precautions against ignitions and fires should be taken with this product.

**NOTICE:** Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Solutia Inc. makes no representations or warranties as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Solutia Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information or the product to which Information refers. Nothing contained herein is to be construed as a recommendation to use any product, process, equipment or formulation in conflict with any patent, and Solutia Inc. makes no representation or warranty, express or implied, that the use thereof will not infringe any patent. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

# WORLDWIDE SALES OFFICES

## UNITED STATES

### For order assistance

Please call our Customer Service Department, toll free at (800) 426-2463.

### For technical assistance

Please call our Technical Service Hotline, toll free at (800) 433-6997.

#### St. Louis

P.O. Box 66760  
St. Louis, Missouri 63166-6760  
Tel: (314) 674-1000  
Fax: (314) 674-6331

## INTERNATIONAL SALES OFFICES

### Argentina

Solutia Argentina S.R.L.  
Alicia Moreau de Justo 1960  
2do piso – Oficina 203  
Puerto Madero Buenos Aires-  
Argentina  
Tel: +54-11-4515-0709  
Fax: +54-11-4515-0728

### Brazil

Solutia Brazil Ltda.  
Rua Gomes de Carvalho  
1306-60. Andar 04547-005  
Sao Paulo, SP, Brazil  
Tel: +55-11-3365-1839/1838/1832  
Fax: +55-11-3365-1833

### Canada

Solutia Canada Inc.  
6800 St. Patrick Street  
LaSalle, Quebec  
Canada H8N 2H3  
Tel: 514-366-4855  
Fax: 514-366-8355

### Europe/Africa/Middle East

Solutia Europe N.V./S.A.  
Rue Laid Burniat, 3  
Parc Scientifique – Fleming  
B-1348 Louvain-la-Neuve (Sud)  
Belgium  
Tel: +32.10.48.12.11  
Fax: +32.10.48.12.12

### India

Solutia Chemicals India Pvt Ltd,  
205-207, Midas Building, 2nd Floor  
Sahar-Plaza Complex  
Andheri-Kurla Road  
Andheri East  
Mumbai-59 India  
Tel: +91-22-2830-2860  
Fax: +91-22-2830-2859

### Japan

Solutia Japan Ltd.  
Shinkawa Sanko Building  
Second Floor  
1-3-17, Shinkawa, Chuo-ku  
Tokyo 104-0033, Japan  
Tel: +81-03-3523 2080  
Fax: +81-03-3523 2070

### Korea

Solutia Korea Ltd.  
3rd Floor, Anglican Church Building  
3-7, Jeong-dong, Joong-gu,  
Seoul 100-120, Korea  
Tel: +82-2-736-7112  
Fax: +82-2-739-5049

### Malaysia

Solutia Hong Kong Ltd.  
Malaysia Branch  
12th Floor (1309-B)  
Kelana Parkview Tower  
No. 1 Jalan SS 6/2  
Kelana Jaya  
47301 Petaling Jaya  
Selangor, Malaysia  
Tel: +60-3-7804-5766  
Fax: +60-3-7804-4067

### Mexico

Solutia Mexico, S. de R.L. de C.V.  
Paseo de la Reforma No. 2654 Piso 3-A  
Col. Lomas Altas  
C.P. 11950  
México D.F.  
Tel: +52-55-5259-6800  
Fax: +52-55-570-9847

### Russia/CIS

Solutia Europe S.A.  
Trekhpudny Lane, 9 Office 203  
Moscow 123001 Russia  
Tel: +7-095-9335911  
+7-095-9335912  
Fax: +7-502-9335910

### Shanghai

Solutia International Trade Co. Ltd.  
Unit 18-06/07  
Harbour Ring Plaza  
18 Xi Zang Zhong Road  
Shanghai, PRC 200001  
Tel: +86-21-6386-7500 ext. 15  
Fax: +86-21-6385-1882

### Singapore

Solutia Singapore Pte. Ltd.  
101 Thomson Road  
#19-01/02 United Square  
Singapore 307591  
Tel: +65-6357-6100  
Fax: +65-6357-6201

### Suzhou

Solutia Chemical Co. Ltd., Suzhou  
9th Floor, Kings Tower  
12 Shi Shan Road  
Suzhou New District, PRC 215011  
Tel: +86-512-6825-8167  
Fax: +86-512-6825-0417

### Taiwan

Solutia Taiwan Inc.  
7F-1, 122 Chung-Cheng Road  
Shih-lin Dist.  
Taipei 111, Taiwan  
Tel: +886-2-8866-6181  
Fax: +886-2-8866-2703

### Thailand

Solutia Thailand Ltd.  
3rd Floor  
Lake Rajada Office Complex Building  
193/11 Ratchadapisek Road  
Klongtoey, Bangkok 10100  
Thailand  
Tel: +662-264-0940-3  
Fax: +662-264-0944

Visit our Web site at  
**[www.therminol.com](http://www.therminol.com)**



Solutia  
P.O. Box 66760  
St. Louis, MO 63166-6760  
Tel: (314) 674-1000

Litho in U.S.A. CTHE 80001  
® Registered Trademark of Solutia Inc.  
© Solutia Inc., 2004. All rights reserved.  
♻️ Printed on recycled paper